

## REMARKS

The rejection of claims 1-10 under 35 USC 103(a) over EP 0725126 (EP) in view of Audeh et al US 4265735 (Audeh) and Putman US 6231752 (Putman) is respectfully traversed. It is submitted that the EP process of combining various portions of a stream (not necessarily a full boiling range naphtha) to unite sulfur compounds of similar difficulty in treatment, is the anthesis of the present invention which is to divide a full boiling range naphtha in to light, intermediate and heavy streams and variously treat the separated streams.

The examiner's candor in recognizing 9 deficiencies in the disclosure of the primary reference is appreciated. The examiner admits that the EP reference is deficient in that the following elements of the claims are not taught:

1. "The reference does not disclose a desulfurization process comprising the steps of separating the full boiling range cracked naphtha stream into three fractions comprising a light cracked naphtha fraction, an intermediate cracked naphtha fraction, and a heavy cracked naphtha; subjecting the heavy cracked naphtha to hydrodesulfurization in a first hydrodesulfurization reactor containing a hydrodesulfurization catalyst; and combining the effluent from the first hydrodesulfurization reactor with the intermediate cracked naphtha and subjecting the combined stream to hydrodesulfurization in a second hydrodesulfurization reactor."

2. "The reference does not disclose a process wherein light cracked naphtha contains substantially all of the mercaptans and is subjected to a wet caustic wash

process wherein the mercaptans contained therein are converted to sulfides and said sulfides are removed."

3. "The reference does not disclose a process wherein the intermediate cracked naphtha contains mercaptans and substantially all of the thiophenes and substantially all of said mercaptans and thiophenes are converted to hydrogen sulfide in a second hydrodesulfurization reactor."

4. "The reference does not disclose a process wherein said heavy cracked naphtha contains thiophenes and substantially all of said other organic sulfur compounds and a portion of said thiophenes and other organic sulfur compounds are converted to hydrogen sulfide in said first hydrodesulfurization reactor."

5. "The reference does not disclose a process wherein substantially all of the remaining thiophenes and other organic sulfur compounds are converted to hydrogen sulfide in said second hydrodesulfurization reactor."

6. "The reference does not disclose a process wherein the full boiling range cracked naphtha stream is first subjected to thioetherification in a thioetherification reactor prior to separating the full boiling range cracked naphtha stream into said three fractions, wherein substantially all of said mercaptans are reacted with a portion of said diolefins to form sulfides."

7. "The reference does not disclose a process wherein said sulfides are removed in said heavy cracked naphtha and substantially all of said sulfides are converted to hydrogen sulfide in said first hydrodesulfurization reactor."

8. "The reference does not disclose a process wherein the remaining sulfides are converted to hydrogen sulfide in said second hydrosulfurization reactor."

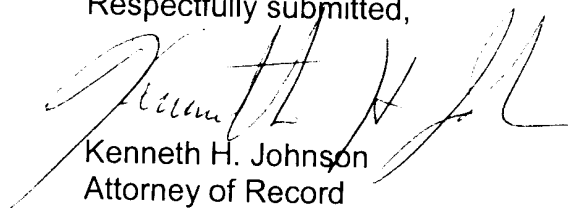
9. "The reference does not disclose a process wherein the intermediate cracked naphtha fraction boils in the range of about 150 to 250 F."

The examiner does not allege that either of the two secondary references, Audeh or Putman disclose any items that are deficient in the EP reference or in any manner teach to combine their respective processes with the EP process to meet the terms of the claims. Therefore, the rejection fails to make out a *prima facie* case of obviousness. The examiner has numerous statements that the various steps in the present claimed process are "obvious", however there is no evidence of that. It is mere conjecture and speculation. It is well settled that a rejection based on § 103 must rest upon a factual basis rather than conjecture or speculation. "Where the legal conclusion of [of obviousness] is not supported by the facts it cannot stand." *In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967); see also *In re Sporck*, 301 F.2d 686, 690, 133 USPQ 360,364 (CCPA 1962). "Obviousness cannot be established by combining teachings of the prior art to produce the claimed invention, *absent* some teaching suggestion or incentive supporting the combination." *In re Geiger*, 2 USPQ2d 1276 (CAFC 1987). Hence, without the requisite teaching, suggestions or incentives there is no *prima facie* case and the rejection must fail. The court was addressing piecemeal combination of teachings, which could be argued met the claims, however, the proposed combination does not even meet the claims of the present invention and

does not even rise to the level of putative *prima facie* case. See also *In re Fine*, 5 USPQ2d 1596 and *Ex parte Levengood*, 28 USPQ2d 1300 (BdPatApp 1993).

Reconsideration and allowance of the claims is respectfully solicited.

Respectfully submitted,



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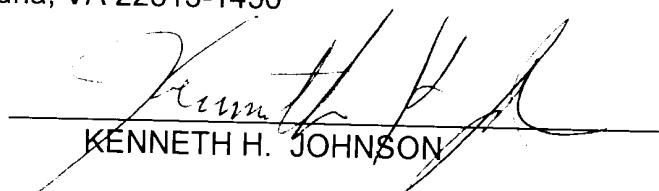
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